

WHAT IS CLAIMED IS:

1. A fixing mechanism arranged within a probe unit for examining the electrical characteristics of a target object, the target object being maintained under
5 a high-temperature environment within a probe chamber, comprising:

a probe card provided with a plurality of probes which are to be brought into an electrical and mechanical contact with the target object, which is
10 configured to examine the electrical characteristics of the target object, the probe card being exposed to a high-temperature atmosphere;

a support frame configured to support the probe card in the central portion thereof;

15 a plurality of first fastening members configured to fasten the probe card on the support frame to fix the probe card;

a holding frame configured to hold the probe card and the support frame in the outer peripheral portions thereof so as to permit the probe card to be thermally
20 expanded toward the periphery thereof, the holding frame being fixed to the probe unit; and

a plurality of second fastening members configured to fasten the holding frame on the support frame to fix
25 the holding frame.

2. A fixing mechanism according to claim 1, wherein the probe card is held between the holding

frame and the support frame.

3. A fixing mechanism according to claim 1,
wherein the outer circumferential edge portion of the
probe card is positioned between the support frame and
5 the holding frame, and a clearance is formed on the
outside of the outer circumferential surface of the
probe card.

4. A fixing mechanism according to claim 1,
wherein each of the support frame and the holding frame
10 is formed of a material having a low thermal expansion
coefficient.

5. A fixing mechanism according to claim 1,
wherein a heat-insulating material layer is formed on
the lower surface of at least one of the support frame
15 and the holding frame.

6. A fixing mechanism according to claim 1,
further comprising a head plate having the holding
frame fixed thereto.

7. A fixing mechanism according to claim 1,
20 wherein the holding frame corresponds to the head
plate.